



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,417	07/18/2003	Sachin Navin Chheda	200308578-1	4994
22879	7590	12/13/2005	EXAMINER	
HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400			SUGENT, JAMES F	
			ART UNIT	PAPER NUMBER
			2116	

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/623,417	CHHEDA ET AL.	
	Examiner	Art Unit	
	James Sugent	2116	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 18 July 2003.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) _____ is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-23 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 18 July 2003 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

5 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10 **Claims 1-23** are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Fung (U.S. Patent Publication No. 2002/0004912 A1).

As per **claim 1**, Fung discloses a system for power management of a group of computers, 15 the system comprising:

- server side infrastructure (SSI) circuitry (server module 402) at each computer in the group, the SSI circuitry including local monitoring circuitry (activity indicator generator 406) coupled (via AMPC bus) to a central processing unit (CPU) (CPU 404) of the computer (paragraph 104, lines 4-15 and paragraph 107, lines 24-35);

20 and

- a centralized power management module (CPMM) (management module 430) with a management link (via AMPC bus) to the SSI circuitry (server module 402) at each computer in the group (paragraph 107, 21-32),

- wherein the local circuitry (activity indicator generator 406) at each computer in the group monitors power consumption at the CPU (404) and transmits power consumption data (activity indicator data structure 410) to the CPMM (management module 430; paragraphs 104 and 105), and
- 5 • wherein the CPMM (management module 430) applies a set of rules (power saving modes are first introduced in paragraph 107; however, power saving rules are covered in detail in paragraphs 190-247) to the power consumption data (activity indicator data structure 410) to determine when and at which computers to enable and disable a CPU power throttling mode (paragraphs 107 and 108).

10

As per **claim 2**, Fung discloses a system wherein the group of computers (server modules 54) comprises multiple servers mounted in a rack (paragraph 40).

15 As per **claim 3**, Fung discloses a system wherein the group of computers comprises a plurality of blade servers (server modules 54) in a blade chassis (as shown in figure 2; paragraph 40).

As per **claim 4**, Fung discloses a system wherein the group of computers comprises a group of workstations (management nodes 136, 138 and 146; paragraphs 99 and 100).

20

As per **claim 5**, Fung discloses a system further comprising:

- a console (138) coupled to the CPMM (management module 430) for user interaction (paragraphs 50, 100 and 189).

As per **claim 6**, Fung discloses a system wherein the console comprises a console (138)

5 connected locally (via bus 140 or 142) to the CPMM (paragraphs 50 and 100).

As per **claim 7**, Fung discloses a system wherein the console comprises a remote console

(136) coupled via a network (through the internet 132 via connection 134) to the CPMM

(paragraph 126).

10

As per **claim 8**, Fung discloses a system wherein the system is configured to enable a user to setup the aforementioned rules by way of the console (paragraphs 50, 100 and 189).

As per **claim 9**, Fung discloses a system wherein the system is configured to enable a

15 user to view power consumption data by way of the console (paragraphs 50, 100 and 189).

As per **claim 10**, Fung discloses a system further comprising:

- additional CPMMs (one or more management modules 53 in figure 2) with management links (AMPC bus) to SSI circuitry (server modules 54) at additional groups of computers (Fung discloses additional groups of computers referred to as server system units 52; paragraph 40); and

20

- a power management system coupled to the plurality of CPMMs (paragraphs 42 and 104-107).

As per **claim 11**, Fung discloses a system wherein the power management system is
5 configured to enable a user to view power consumption data and to customize the sets of rules
applied by the CPMMs (paragraphs 50, 100 and 189).

As per **claim 12**, Fung discloses a server-side apparatus for a rack-mounted computer, the
apparatus comprising:

10

- a local monitoring circuitry (activity indicator generator 406) coupled to a central processing unit (CPU) (CPU 404 of server module) of the computer and coupled (via AMPC bus) to a centralized power management system (server module control algorithm and unit 432 of management module 430; paragraph 104),
- wherein the local circuitry (activity indicator generator 406) is configured to monitor power consumption (activity monitoring) at the CPU (404), transmit power consumption data (activity indicator data structure 410) to the centralized power management system (management module 430; paragraph 104, lines 7-22), receive management messages from the centralized power management system, and send commands to enable and disable a power throttling mode at the CPU (404) (paragraph 107).

15

20

As per **claim 13**, Fung discloses an apparatus further comprising:

- a power measurement link (AMPC bus) between the local monitoring circuitry (activity indicator generator 406) and the CPU (CPU of management module 430) via server module control algorithm and unit 432 for monitoring power consumption at the CPU (paragraph 107, 24-35).

5

As per **claim 14**, Fung discloses an apparatus further comprising:

- an interrupt line (AMPC bus) between the local monitoring circuitry (activity indicator generator 406) and the CPU (CPU of management module 430) for transmitting interrupt messages that enable and disable the power throttling mode at the CPU (paragraph 107).

10

As per **claim 15**, Fung discloses an apparatus further comprising:

- a special register (frequency control register 205) writable by the local monitoring circuitry (activity monitor of CPU 201) and readable by the CPU to enable and disable the power throttling mode at the CPU (paragraph 122).

15

As per **claim 16**, Fung discloses a central power management apparatus for a group of computers (server modules 54) mounted in a rack (50; paragraph 40), the apparatus comprising:

20

- a management module (management module 430) coupled (via AMPC bus) to local monitoring circuitry (activity indicator generator 406) at each computer in the group (paragraph 40),

5

- wherein the management module (management module 430) is configured to receive power consumption data (activity indicator data structure 410) from the local monitoring circuitry (activity indicator generator 406), determine at which computers to enable and disable a CPU power throttling mode, and transmit messages to said determined computers to enable and disable the CPU power throttling mode (paragraph 107).

As per **claim 17**, Fung discloses a method for power management of a group of computers (server modules 302), the method comprising:

10

- monitoring power consumption (activity monitoring in CPU 320) at each computer (server module 302) in the group (paragraph 104 and 110-113); and
- transmitting power consumption data (activity indicator data structure 410; paragraph 104) from each computer in the group to a centralized power manager (server module algorithm and unit 432 of management module 316; paragraph 15 104 and 110-113).

As per **claim 18**, Fung discloses a method further comprising:

20

- transmitting messages from the centralized power manager (management module 316) to local circuitry (core logic 330 containing power management unit 332) at said determined computers (server modules 302) to enable and disable the CPU (320) power throttling mode at those computers (paragraphs 107 and 110-113); and

- applying a configurable set of rules (paragraph 189) to the power consumption data (activity indicator data structure 410) to determine at which computers to enable and disable a CPU power throttling mode (paragraphs 107 and 110-113).

5 As per **claim 19**, Fung discloses a method wherein the group of computers comprises a rack of servers (rack mounted server system 50), and the centralized power manager (management module 316) comprises a rack-level power manager (paragraph 40).

As per **claim 20**, Fung discloses a centralized method for managing power consumption
10 of a group of computers (integrated server system units 52), the method comprising:

- receiving power consumption data (activity indicator data structure 410) from local monitoring circuitry (activity indicator generator 406) at each of the computers (paragraph 104);
- determining at which computers to enable and disable a CPU power throttling mode (paragraph 107); and
- transmitting messages to said determined computers to enable and disable the CPU power throttling mode (paragraph 107, 21-35).

As per **claim 21**, Fung discloses a method wherein the group of computers comprises a
20 rack of servers (paragraph 40).

As per **claim 22**, Fung discloses a power management apparatus for managing power usage of a group of computers (server modules 402) at a rack-level (paragraph 40), the apparatus comprising:

- means for (AMPC bus) receiving power consumption data (activity indicator data structure 410) from the local monitoring circuitry (activity indicator generator 406; paragraphs 107-110);
- means for (server module control algorithm and unit 432) determining at which computers to enable and disable a CPU power throttling mode (paragraph 107); and
- means for (AMPC bus) transmitting messages to said determined computers to enable and disable the CPU power throttling mode (paragraphs 107-110).

As per **claim 23**, Fung discloses an apparatus wherein the group of computers comprises a rack of servers (paragraph 40).

15

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Sugent whose telephone number is (571) 272-5726. The examiner can normally be reached on 8AM - 4PM.

20 If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne can be reached on (571) 272-3670. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

10 James Sugent
Patent Examiner, Art Unit 2116
December 6, 2005


LYNNE H. BROWNE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100